

**Amendments to the Claims:**

The following Listing of Claims replaces all prior versions and listings of the claims in this application:

**Listing of the Claims:**

1. – 18. (Cancelled).

19. (New) An automatic system for taking of a fluid sample from a sample site of a living test object, comprising:

catheter means comprising a three-way junction configured to be located in proximity to the sample site, wherein the three-way junction is connected to a first catheter means, a second catheter means and a sample-taking end;

a valve connected to the first catheter means, the valve having an inlet for an immiscible fluid to be aspirated into the first catheter means;

pumping means connectable to the catheter means and configured to aspirate an amount of the immiscible fluid into the first catheter means and to move the amount of the immiscible fluid to the three-way junction and arrange a first part of the immiscible fluid in a part of the second catheter means and a second part of the immiscible fluid in a part of the first catheter means such that the first and second parts of the immiscible fluid separate a taken sample from a rinsing fluid; and

a source of rinsing fluid connectable to the catheter means and configured to supply a rinsing fluid from the source to the catheter means;

wherein the pumping means are configured to provide a flow of rinsing fluid from the

source of rinsing fluid through the catheter means to a waste tube at a delivery end of the catheter means and comprise a first pumping means and a second pumping means, and the first pumping means is configured to provide a pushing action equal to a suction action provided by the second pumping means, whereby the rinsing fluid will pass by the sample-taking end without entering when flowing from the first catheter means to the second catheter means.

20. (New) The system as recited in claim 19, wherein the pumping means is further configured to control a flow rate and a flow direction of a fluid comprised in the catheter means such that the fluid flow can pass by the sample-taking end when flowing from one of the first and second catheter means to the other.

21. (New) The system as recited in claim 19, wherein the sample-taking end is configured to be placed at the sample site, wherein the pumping means is configured to move the first part of the immiscible fluid towards an end opening of the sample-taking end and to take a fluid sample when the first part of the immiscible fluid is located at the end opening, and wherein the pumping means is configured to transport the taken sample from the sample-taking end to a sample-delivery end configured to deliver the taken sample to a sample tube.

22. (New) The system as recited in claim 19, further comprising a plurality of valves arranged at the catheter means and configured to control a flow path of fluid in the catheter means.

23. (New) The system as recited in claim 22, further comprising a control unit connectable to the pumping means and the plurality of valves and configured to control operation of the pumping means and the plurality of valves.

24. (New) The system as recited in claim 19, wherein the catheter means comprises a double lumen catheter means.

25. (New) The system according to claim 19, wherein the first and second pumping means are further configured to operate simultaneously or separately.

26. (New) The system as recited in claim 25, further comprising a third pumping means configured to operate when the first and second pumping means are operated separately and to compensate for action of an active one of the first and second pumping means.

27. (New) The system as recited in claim 19, further comprising analyzing means configured to analyze a taken fluid sample.

28. (New) The system as recited in claim 19, further comprising a source of a drug solution connectable to the catheter means, the pumping means being configured to transport an amount of the drug solution to the sample-taking end and supply the drug solution to the sample site.

29. (New) An automatic system for taking of a fluid sample from a sample site of a living

test object, comprising:

catheter means comprising a three-way junction configured to be located in proximity to the sample site, wherein the three-way junction is connected to a first catheter means, a second catheter means and a sample-taking end;

a valve connected to the first catheter means, the valve having an inlet for an immiscible fluid to be aspirated into the first catheter means; and

pumping means connectable to the catheter means and configured to aspirate an amount of the immiscible fluid into the first catheter means and to move the amount of the immiscible fluid to the three-way junction and arrange a first part of the immiscible fluid in a part of the second catheter means and a second part of the immiscible fluid in a part of the first catheter means such that the first and second parts of the immiscible fluid separate a taken sample from a rinsing fluid;

wherein the catheter means includes a connection for supplying a rinsing fluid to the catheter means; and

wherein the pumping means are configured to provide a flow of rinsing fluid from the connection through the catheter means to a waste tube at a delivery end of the catheter means and comprise a first pumping means and a second pumping means, and the first pumping means is configured to provide a pushing action equal to a suction action provided by the second pumping means, whereby rinsing fluid will pass by the sample-taking end without entering when flowing from the first catheter means to the second catheter means.